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FISHING WITH POISON IN AFRICA

During the American Museum Expedition to the Belgian Congo, 1909-1915, we had opportunity to gather a large collection of fish from the Congo River and its northeastern affluents.

It may be interesting to give a short account of one of the most successful methods of fishing used by the natives of the Logo and Bakango tribes of Faradje (Uele District) on the Dungu River, an affluent of the Uele-Ubangi system. At the appointed day in the early morning a crowd of women and children set out with baskets full of leaves of a large bush with white pea-like flowers (*Tephrosia*), which they cultivate in their villages. At a particular rocky place where the river was about 500 yards wide, they selected one of the largest rocks forming a low island. They threw these leaves into the circular erosions, which thus served as mortars. Two or three women over one hole would busily handle the pestles crushing the leaves, keeping time to the songs of the merry crowd. In the meantime a few of the men and boys had, downstream, constructed a slight barrier of branches and green twigs across the shallow riverbed. Now these slowly came up stream with their dugouts, and, with good wishes for success, received the green mush from the holes in large, wide-meshed baskets. Again paddling upward for a few hundred yards,

they made fast their canoes. At this place the stream was partially obstructed by the emerging rocks, and to the passages between, with much stronger current, they carried their nearly full baskets. All at once, they dipped them into the water and stirred the mush rapidly with one hand. Soon the brownish water showed a distinct greenish hue and within less than five minutes fish after fish came to the surface acting as if it had completely lost its power of equilibrium.

Men, women and children armed with spears and arrows, knives and hatchets all had rushed into the water or taken positions on the different rocks, on the lookout for the doomed fish. For about an hour the whole section downstream became the happy and noisy hunting-ground of the natives who either would throw the fish as they were killed, out upon the larger rocks, or carry them along in baskets. When the catch was complete all fish were distributed by the chief among the party, he retaining a few of the larger ones that weighed easily from 10 to 20 lbs. each.

It seemed to us that fish killed with this poison decomposed more rapidly, yet it is certain that they may be consumed without the slightest danger. The fish taken belonged chiefly to the families, Siluridae, Mormyridae, Cyprinidae, Characinidae.

While we were standing on a rock, a boy had thrown out with a painful yell, a small specimen of an electric catfish (*Malapterurus electricus*). To prevent its struggling back into the water, I stepped on it and was greatly surprised to receive through a one-third inch heavy leather sole, a shock that made me withdraw my foot quickly. I pushed the fish into a hole and Mr. Chapin and myself marveled that such a small specimen could store enough electricity to repeat this performance at least ten times through wet soles.

Many tribes do not eat this fish, which has a thick, rather loose, blubber-like skin, but I have heard

from white men that it is excellent eating, after the removal of its electric hide.

HERBERT LANG,
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LONG ISLAND FISHES NOTED BY MR. J. G. RAYNOR

Elops saurus. The Big-eyed Herring or Ten-Pounder, is of particular interest to students of evolution and of the past life of the earth, because it is what is often called "a living fossil," that is, a type which has come down from remote ages with very little change in structure. This fish is in fact a little modified representative of a group which flourished far back in the Cretaceous Period of the earth's history. It is also one of the most primitive of all the teeming hosts of Teleost fishes. Its nearest relatives among existing fishes are the Tarpon (*Megalops*) and the Ladyfish (*Albula*).

The American Museum of Natural History has recently received from Mr. John G. Raynor a specimen of this fish taken at Westhampton Beach, Long Island, about October 20, 1914. Others were taken at about the same time. The occurrence of this southern form on Long Island is sufficiently infrequent to be worthy of record; it is said to be common at Woods Hole, Mass., in October.*

Tetrapterus imperator. Mr. Raynor reports a Spearfish taken at Westhampton in the last of June or first part of July, 1890. He verified its identification by examining a figure of the species as well as a mounted Sailfish and a Swordfish model at the museum; and later submitted a very fair photograph of the fish, taken at the time of capture. To judge from the photograph it was eleven or twelve feet in total length. This fish apparently belongs with the Spearfish incursion reported from Woods Hole 1885

* Bull. U. S. Bur. Fish. Vol. 31, pt. 2.

to 1890.* It is the only definite Long Island record for the species that we know of.

Lophius piscatorius. From Mr. Raynor we have "Carpet-bag" and "Glutton" as local names for the Angler. Many Long Island fishermen loosely call it "Toadfish," although probably realizing that it is different from the smaller *Opsanus tau,* for which the name is also used and to which it properly belongs. At Easthampton, according to Mr. J. L. Helmuth, some of the fishermen call *Lophius,* "Angler," and he has heard it called "Dogfish" by one resident. In 1912 it was sometimes called "Muttonleg" by the crew of an off-shore beam-trawler who were bringing it head-less to the New York market. These notes may be of interest to anyone compiling a vernacular synonymy of the species.

W. K. Gregory,
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GARTER SNAKE SWALLOWED BY PIGMY "RATTLER"

It is not generally known that the Pigmy or Florida Ground Rattlesnake (*Sistrurus miliarius*) is on some occasions inclined toward cannibalism. A fine specimen eighteen inches long, lately disclosed this inclination and clearly demonstrated that the snake can swallow another considerably longer than itself.

On September 19, 1915, a captive Garter Snake (*Eutaenia sirtalis*) twenty-one inches long, which had been in my collection but a short while, gave birth to a litter of fifteen young. Not having a spare cage in which to put the mother and her offspring, I decided to place them in a cage with two Pigmy Rattlesnakes. On the following morning my attention was drawn to what more resembled a distorted sausage than it did a snake. It happened that one of the Pigmies had killed and swallowed the Garter Snake. The

* Bull. U. S. Bur. Fish. Vol. 31, pt. 2.

victim, which was over three inches longer than the "rattler," had been swallowed head foremost, and, because of its greater length lay in lateral folds in the stomach of the *Sistrurus*. As a result the latter snake was much distorted in outline. Due to handling and a consequent nervous reaction the Rattlesnake later disgorged its lengthy meal.

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RING-NECK SNAKE AT ORIENT, LONG ISLAND

In COPEIA, April, 1915, issue, a list of Long Island snakes is given with two stations for the Ring-neck Snake: Port Jefferson and Yaphank.

On September 12, 1915, while plowing in a weedy corner between two plots of woodlands, I turned out a young Ring-neck (*Diadophis punctatus*). It was five inches in length, of an uniform dark-gray above, the light band very prominent.

A small boy following in the furrow, who first called my attention to the specimen, reported that there were two of the same species; one quickly escaping into the thick bramble at the wood-margin, that one being much larger, as much as ten inches in length.

These were evidently hiding underneath loose turfts of sod. Much rubbish, boards, logs, stones and odds and ends are piled in the edge of the woods there. Although many searches have been made, no signs of others have appeared.

It is interesting to record a third station on Long Island for this secretive little reptile.

ROY LATHAM,
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LOS ANGELES SALAMANDERS

In a branch canyon of Topango Canyon, near Santa Monica, California, is a small pool from which

water is piped for a ranch house below. This pool is not more than two feet in depth, four feet long and three feet wide. It is covered with boards and is surrounded by much damp disintegrated granite, rich loam and leaves from shady oak-trees above.

Between the boards and underneath, within three feet of one another, I found—on May 31st, 1915—the four different salamanders known to exist in the vicinity of Los Angeles. They were: *Diemyctylus torosus,* commonly known as the "Water-dog." *Autodax lugubris, Plethodon oregonensis,* and *Batrachoseps attenuatus.*

The "Water-dogs" were plentiful and included young without gills and adults of full size. Altogether there were about twenty of them which lived in and about the pool.

One *Autodax lugubris* lay coiled between the damp boards, beneath which a pretty specimen of *Plethodon oregonensis* lay on a wet rock near the water's edge. At one side, on damp earth beneath a rock, hid a *Batrachoseps attenuatus.* The three salamanders last mentioned were all adult.

This is the second specimen of *Plethodon oregonensis* that has come under my observation during the last three years. This is the first time I have known of the four Los Angeles Salamanders having been found in one place or even in one day.

A few weeks later, a visit in hotter and dryer weather showed only "Water-dogs," to be in evidence at the same place, although I had left the salamanders, boards and rocks as I had found them.

PAUL RUTHLING,
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LIST OF REPTILES AND AMPHIBIANS FROM CLARK COUNTY, VA.

I spent August 2-14, 1915, on the Shenandoah River at White Horse, two miles above Berry's Fer-

ry in Clark County, Virginia, at an altitude of 500-900 feet. The following species were observed.

Plethodon glutinosus (Green). One specimen under a log. *Spelerpes bislineatus* (Green). A few adults, many transforming larvae, and a few young larvae. *Spelerpes longicaudus* (Green). 4 adults and 3 larvae. *Spelerpes ruber* (Daudin). 2 one-year-old larvae. *Desmognathus fusca* (Rafinesque). *Bufo americanus* Holbrook. *Hyla versicolor* LeConte. None were seen but they could be heard each night in the trees. *Acris gryllus crepitans* (Baird). *Rana catesbeiana* Shaw. *Rana clamata* Daudin. *Rana palustris* LeConte. *Sceloporus undulatus* (Latreille). Not common, only one seen. *Thamnophis sauritus* (Linnaeus). 1. *Natrix septemvittata* (Say). 1. *Natrix sipedon* (Linnaeus). 6. *Lampropeltis triangulus* (Boie). 1, about a yard long. The blotches were dark red and reached the second scale row. *Diadophis punctatus* (Linnaeus). 2. *Virginia valeriae* Baird and Girard. 1. *Bascanion constrictor* (Linnaeus). 3. *Elaphe obsoletus* (Say). 2. *Ancistrodon contortrix* (Linnaeus). 6. They hid all day in the rock slides on the mountains and came out at night. Specimens were caught passing through the camp after dusk. *Crotalus horridus* Linnaeus. 1, caught swimming the river. *Chelydra serpentina* (Linnaeus). *Pseudemys rubriventris* (LeConte)? A large river terrapin which was not caught is referred to this species. *Terrapene carolina* (Linnaeus).

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CHLORETONE, A KILLING AGENT

For some time I have been using chloretone as a killing agent for batrachians and reptiles, and it seems to be in a measure superior to either chloroform or ether. In use the animal is simply dropped into a 1% solution, and no more uneasiness appears than when the same individual is immersed in pure

water. Aquatic forms behave in a natural way, and terrestrial animals do no more than struggle to get out. All die without contorted muscles or an abnormal amount of glandular excretions. Toads, frogs and salamanders usually succumb in 5 or 10 minutes, but reptiles survive longer, occasionally a half hour or more after submersion. Chloretone is especially useful in killing such snakes, *Charina* for example, as are apt to die under chloroform with the muscles in a state of extreme contraction, the body then presenting a knotted and crooked appearance. A solution will keep for years in a closed vessel, requiring only the occasional addition of a few crystals of the drug, and filtering to remove accumulated matter.

Chloretone is not recommended as being equal to alcohol in killing fishes for the reason that the latter acts quickly and serves at the same time as a fixing agent of the tissue of the scale pockets.

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PRICE FIVE CENTS